Computer Technology I

Levels: Grades 9-12
Units of Credit: 0.50
CIP Code: 52-0417
Core Code: 32-02-00-00-240
Prerequisite: Satisfactory Keyboarding or Business Digital Literacy
Skill Test: # 250

COURSE DESCRIPTION: Computer literacy is a foundational element of success in today's technology-driven world. This course is intended for students to learn concepts associated with key application software, basic computing fundamentals, and ethics and appropriate behavior while using technology as a tool in the classroom and in life. This course is aligned with national and international standards and the Utah Core to prepare students across multiple levels of skills. Students have the opportunity to test out of this course by successfully passing Certiport's IC3 GS4 certifications.

CORE STANDARDS, OBJECTIVES, AND INDICATORS:

STANDARD 1: (Technology Operations and Concepts) Students will be introduced to and be able to demonstrate a sound understanding of computer technology: what types of technology exist, how types of technology function, what component parts work with specific technologies (NETS-S 6: a, b, c, d).

> **Objective 1:** Demonstrate understanding of computer hardware, peripherals and troubleshooting (RST 11-12.3, 4, 10).
> – Explore various computers available in current technology.
> – Identify and understand components and peripherals, including input-output devices: cameras, printers, scanners, game-controllers, etc.
> – Explore and demonstrate knowledge of how to maintain computer equipment and solve common hardware problems.

> **Objective 2:** Understand, evaluate, and use computer software (RST 11-12.8 & 9).
> – Use software tools for creating, finding, organizing, and communicating information.
> – Popular software: word processing, spreadsheets, presentation software, databases, graphic and multimedia programs, etc.
> – Transfer knowledge of how software and hardware work together to perform computing tasks
> (Information Processing Cycle: Input, Output, Processing, Storage, Communication)
> – Understand software types and be able to access updates.

> **Objective 3:** Explore and demonstrate understanding of managing operating systems (RST 9-12.3).
> – Select and/or use the following effectively and productively: windows, folders, files and shortcuts; install, uninstall and run various applications; solve common problems.
> – Critically discuss and select operating systems and capabilities.

(e.g., Windows, Macintosh OS, Linux, etc.)
- – Use an operating system to manipulate a computer's desktop, files and disks.
- – Identify how to change system settings, install and remove software. Describe the different roles and rights of users on a computer.
- – Identify the different purposes and power states of an operating system.
- – Manage (create, delete, move, duplicate, etc.) computer files.
- – Understand directories, file extensions, and associations.

STANDARD 2: (Productivity Applications) Students will understand and effectively use the common application functions with word processing, spreadsheets, and presentation software and routinely interact, collaborate, and publish with peers/online communities using these tools and functions (NETS-S 6: a, b, c, d).

Objective 1: Understand and integrate common application functions (RST 9-12.10; WHST 9-12.9).
- – Be able to start and exit an application, identify and modify interface elements.
- – Assess and use sources of online help.
- – Create new blank files and files from templates.
- – Learn and perform common editing, formatting, and personalization functions.
- – Learn and perform common printing/outputting functions.
- – Search effectively in a data file.
- – Change views within a data file.
- – Use and manipulate multimedia files in a file (e.g. rotate, crop, resize, insert, and delete).

Objective 2: Understand and integrate word processing functions (WHST 9-12.6 & 10).
- – Be able to effectively create and format text and documents (Use automatic formatting tools).
- – Be able to use word-processing tools to automate processes: document review, security, collaboration.
- – Use and modify tables and different lists.
- – Use and modify page layout options (e.g. numbering, columns, margins, and alignment of text in paragraphs and tables, tabs and rulers, and orientation).

Objective 3: Effectively use and understand spreadsheet features for application in simulated and real world situations (RST 9-12.3; WHST 9-12.7) (NETS 4: a, b, c, d).
- – Modify, organize and manage worksheet data, structure and formatting (e.g. budgets, statistics, inventory).
- – Modify cells, columns, and rows (e.g. insert, delete, adjust the width/height, change alignment, locate, merge and unmerge cells).
- – Sort, calculate and manipulate data using formulas and functions and create/build simple, effective charts.
- – Apply knowledge of spreadsheets to create and modify charts and graphs.

Objective 4: Effectively use and understand presentation software (RST 9-12.3; WHST 9-12.7).
- – Insert and modify text, tables, multimedia, charts, and shapes on a slide.
- – Add, remove, and modify the order of slides.
- – Change the layout of slides.

- Add and modify animations and transitions.
- Understand the changing history of presentation software and its place in the modern workplace and academic setting.
- Design, manage, modify and present presentations for a variety of audiences and purposes

Objective 5: Understand basic database interactions.
- Create and run basic reports.
- Use and modify a basic query.
- Add, delete, and modify data in a database.

STANDARD 3: (Communication Networks, the Internet, and Digital Citizenship) Students will understand and be able to effectively use and navigate networks and the Internet (WHST 9-12.8) (NETS 5: a).

Objective 1: Interact with and be a part of using computers.
- Use computers as powerful tools for finding, sharing, and storing information around the globe.
- Explore the risks of computing and study the negative impacts on society.
- Advocate and practice safe, legal, and responsible use of information and technology
- Identify the differences between the Internet, World Wide Web, and browsers.
- Classify domains, hyperlinks, homepages, favorites/bookmarks, plugins, tabs, browser history, and downloads/uploads.

Objective 2: Identify network fundamentals.
- Understand and evaluate different networks and how they transmit different types of data.
- Understand and identify the roles of clients and servers in a network
- Understand the fundamental principles of security in regards to networks.
- Demonstrate an understanding of network speeds, wireless communication, firewalls, and gateways.
- Define PSNs, DNSs, IP addresses, LANs, WANs, and VPNs.
- Solve connectivity and common network problems.

Objective 3: Demonstrate skills for digital citizenship.
- Categorize the difference between personal and professional communication.
- Define and explain spamming, flaming, cyber-bullying, libel, and slander.
- Define and describe censorship, filtering, intellectual property, piracy, copyright, licensing, and creative commons.

STANDARD 4: (Electronic Communication and Collaboration) Students will use multiple processes of communication. They will understand what appropriate means of communication is most beneficial for a given task's purpose and audience (NETS-S 4: a, b, d & 2: a) (RST 9-12. 2, 9 & 10; WHST 9-12. 6, 8 & 9).

Objective 1: Interact with and identify different types of electronic communication/collaboration: email, cell phones, blogs, teleconferencing, social networks, email and other electronic devices/tools.

- Demonstrate responsibility in choosing the appropriate means of communication for a given situation and audience.
- Understand common problems and challenges with electronic communication. (e.g., delivery failure, junk mail, fraud, viruses, etc.).

Objective 2: Search effectively
- Use effective search terms in a search engine to get specific information from reputable sources.
- Evaluate information from forums, knowledge bases, and articles.
- Determine the validity of information.
- Use advanced features of a search engine to filter information by file, media, category, and size.

Objective 3: (Computer and the Use of the Internet within Society) Students recognize ways in which human lives interact with and utilize computers (RST 9-12.6, 8 & 9) (NETS 5: b).
- Analyze and discuss various societies' uses of computing (e.g., work, school, government, home and social interaction)
- Identify the risks of using computer hardware and software safely, ethically and legally.
- Explain how to protect identity online (e.g. personal firewalls, cookies, virus and spyware protection, updating programs, and operating systems).
- Investigate the purpose of ergonomics with monitors, computer mice, chair settings, lighting, and posture.

STANDARD 5: (Course Integration throughout General Education Classes) Students will use their document processing, spreadsheet, and/or electronic presentation skills to complete a cross curricular project during the semester (or trimester, etc.,) in which they are enrolled in the Computer Technology course (NETS 2: a, b, c, d).

   Objective 1: Students will use **any or all** of the following in a project to be presented to the Computer Technology teacher **and** a cross-curricular teacher: document processing, spreadsheet, electronic presentation.